

a contact surface 1102 that extends above a plane defined by the polishing surface 1002 of the body 1006. The contact surface 1102 is generally rounded to prevent damage to the substrate during processing.

Please replace the paragraph [0113] with the following paragraph:

[0113] The contact member 1204 is typically formed from a conductive material such as graphite or a metal or other at least partially conductive material compatible with process chemistries as described herein. The contact member 1204 is typically a cylinder, rod, roller, coil, bar or ball although other shapes may be utilized. For example, the contact member 1204 is a graphite rod seated on a graphite carrier 1202 in the embodiment depicted in Figure 12A and the contact member 1204 is a plurality of graphite or gold balls seated on and electrically coupled through a graphite carrier 1202 in the embodiment depicted in Figure 12B.

Support for the amendments in the specification are found in claims 19, 20, 27, 33, and 38, and in paragraph [0113].

IN THE DRAWINGS

Applicant proposes amending the drawings as shown in a separate request for correction of the drawings. Figure 2 has been amended to remove erroneously included matter as indicated in red ink.

IN THE CLAIMS:

Please cancel claims 1-28, 30, and 41 without prejudice, and amend the claims as follows:

1. (Cancelled) An article of manufacture for polishing a substrate, comprising:
a polishing article comprising a body having at least a partially conductive surface adapted to polish the substrate and a mounting surface.

2. (Cancelled) The article of claim 1, wherein the body comprises at least a conductive material having at least a portion of a conductive polymer, conductive filler materials, a polymer composite with conductive materials, a conductive metal, a metal mesh, or combinations thereof.
3. (Cancelled) The article of claim 1, wherein the conductive surface has a resistivity of about 10 Ω -cm or less.
4. (Cancelled) The article of claim 2, wherein the polishing article comprises a metal mesh disposed in a conventional polishing material, wherein the metal mesh is connected to a power source and conducts electricity to the substrate surface through the conductive polishing surface.
5. (Cancelled) The article of claim 1, wherein the polishing article further comprises a plurality of perforations formed therein.
6. (Cancelled) The article of claim 5, further comprising a plurality of grooves disposed in the polishing surface.
7. (Cancelled) The article of claim 6, wherein at least a portion of the plurality of grooves intersect with at least a portion of a plurality of perforations disposed in the polishing surface.
8. (Cancelled) The article of claim 1, wherein the conductive surface comprises conductive polishing article disposed on a conductive article support.
9. (Cancelled) The article of claim 8, wherein the conductive article support is connected to a power source and conducts electricity to the substrate surface through the conductive polishing surface.

10. (Cancelled) The article of claim 5, wherein the article of manufacture is disposed on a polishing article support comprising a plurality of perforations disposed therein for flow of material therethrough.

11. (Cancelled) The article of claim 10, wherein a plurality of perforations in the polishing article are aligned with the plurality of perforations of the polishing article support.

12. (Cancelled) The article of claim 5, wherein the polishing article is mounted on an apparatus for processing a substrate, comprising:

a basin;

a permeable disc disposed in the basin, wherein the polishing article is disposed on the permeable disk and wherein at least a portion of the polishing article comprises an electrode;

a counter electrode disposed in the basin between the permeable disc and the bottom of the basin; and

a polishing head adapted to retain the substrate during processing.

13. (Cancelled) A polishing article for polishing a substrate, comprising:

a body having a polishing surface adapted to polish the substrate; and

at least one conductive element embedded in the polishing surface, the conductive element having a contact surface that extends beyond a plane defined by the polishing surface.

14. (Cancelled) The polishing article of claim 13, wherein the body comprises a dielectric material selected from the group of polyurethane, polycarbonate, polyphenylene sulfide, felt fibers leached with urethane, filled polymers, foamed polymers, and combinations thereof.

15. (Cancelled) The polishing article of claim 13, wherein the body has a plurality of apertures formed therethrough.

16. (Cancelled) The polishing article of claim 13, further comprising a biasing member disposed between the conductive element and the body, the biasing member adapted to urge the conductive element towards the polishing surface.

17. (Cancelled) The polishing article of claim 16, wherein the biasing member comprises a spring, a foam polymer, plastic tubing, an elastomer, or combinations thereof.

18. (Cancelled) The polishing article of claim 16, wherein the biasing member is resilient and urges a compliant contact surface of the conductive element to electrically contact the substrate disposed on the polishing surface.

19. (Cancelled) The polishing article of claim 16, wherein the conductive element is selected from at least one of the group of conductive tubing, a brush, a spring, a pin, a bar, a roller, a ball, and combinations thereof.

20. (Cancelled) The polishing article of claim 16, wherein the biasing member is selected from the group of a spring, a foam polymer, plastic tubing, an elastomer, and combinations thereof, the conductive element is selected from at least one of the group of conductive tubing, a brush, a spring, a pin, a bar, a roller, a ball, and combinations thereof, wherein urges a compliant contact surface of the conductive element to electrically contact the substrate disposed on the polishing surface.

21. (Cancelled) The polishing article of claim 15, wherein the polishing article comprises:

- a body having a polishing surface adapted to polish the substrate;
- a plurality of conductive compliant elements embedded in the polishing surface, the conductive compliant elements having a contact surface that extends beyond a plane defined by the polishing surface and is adapted to be urged by the substrate towards the polishing surface; and

a biasing member disposed between the conductive compliant elements and the body.

22. (Cancelled) The polishing article of claim 13, wherein the conductive member is compliant.

23. (Cancelled) The polishing article of claim 13, wherein the contact surface is rounded, cylindrical, spherical or comprised of fibers, loops, fingers, strands, or combinations thereof.

24. (Cancelled) The polishing article of claim 13, wherein the conductive element further comprises:

a carrier disposed in a pocket formed in the body; and
a contact member disposed on the carrier and extending beyond a plane defined by the polishing surface.

25. (Cancelled) The polishing article of claim 24, wherein the carrier and contact member are conductive.

26. (Cancelled) The polishing article of claim 24, wherein the contact member comprises a plurality of balls, pins, a rod, a spring, or combinations thereof.

27. (Cancelled) The polishing article of claim 24, wherein at least one of the carrier and contact member is made of graphite.

28. (Cancelled) The polishing article of claim 13, further comprising a connector coupled to the conductive member and adapted to electrically couple the conductive member to a bias power source.

29. (Amended) A polishing article for polishing a substrate, comprising:
a body having a polishing surface adapted to polish the substrate;

at least one conductive element embedded in the polishing surface, wherein the conductive element has a contact surface that extends beyond a plane defined by the polishing surface; and

one or more pockets formed in the polishing surface, wherein the conductive element is disposed in at least one of the pockets.

30. (Cancelled) The polishing article of claim 29, wherein the conductive element has a contact surface that extends beyond a plane defined by the polishing surface.

32. (Amended) The polishing article of claim 29, further comprising a biasing member disposed in the pocket between the conductive element and the body.

31. (Allowed) The polishing article of claim 29, wherein the biasing member is a spring, a foam polymer, plastic tubing, an elastomer, or combinations thereof, and urges a compliant contact surface of the conductive element to electrically contact the substrate disposed on the polishing surface.

33. (Amended) The polishing article of claim 29, wherein the conductive element is selected from at least one of the group of conductive tubing, a brush, a spring, a pin, a bar, a rod, a coil, a cylinder, a roller, a ball, or combinations thereof.

34. (Allowed) The polishing article of claim 29, wherein the conductive element further comprises a contact surface that extends beyond a plane defined by the polishing surface.

35. (Allowed) The polishing article of claim 34, wherein the contact surface is rounded, cylindrical, spherical or comprised of fibers, loops, fingers, strands, or combinations thereof.

36. (Allowed) The polishing article of claim 29, wherein the conductive element further comprises:

a carrier disposed in the pocket;
a contact member disposed on the carrier; and
wherein at least a portion of the contact member extends beyond a plane defined by the polishing surface.

37. (Allowed) The polishing article of claim 36, wherein the carrier and contact member are conductive.

38. (Amended) The polishing article of claim 36, wherein the contact member comprises a plurality of balls, pins, a rod, a spring, conductive tubing, a brush, a bar, a coil, a cylinder, a roller, or combinations thereof.

39. (Allowed) The polishing article of claim 36, wherein at least one of the carrier and contact member is made of graphite.

40. (Allowed) The polishing article of claim 29, further comprising a connector coupled to the conductive member and adapted to electrically couple the conductive member to a bias power source through or around the body.

41. (Cancelled) The polishing article of claim 13, wherein the polishing article is disposed on an apparatus for processing a substrate, comprising:

a basin;
a permeable disc disposed in the basin, wherein the polishing article is disposed on the permeable disk;
a counter electrode disposed in the basin between the permeable disc and the bottom of the basin; and
a polishing head adapted to retain the substrate during processing.

Please add new claims 42-99 as follows:

42. (New) An article of manufacture for polishing a substrate, comprising:

a polishing article comprising a body having at least a partially conductive surface adapted to polish the substrate and a mounting surface, wherein the conductive surface has a resistivity of about 10 Ω -cm or less.

43. (New) The article of claim 42, wherein the body comprises at least a conductive material having at least a portion of a conductive polymer, conductive filler materials, a polymer composite with conductive materials, a conductive metal, a metal mesh, or combinations thereof.

44. (New) The article of claim 43, wherein the conductive filler materials comprise conductive fillers include carbon powder, carbon fibers, carbon nanotubes, carbon nanofoam, carbon aerogels, and combinations thereof.

45. (New) The article of claim 43, wherein the conductive filler materials comprise carbon powder, carbon fibers, and combinations thereof.

46. (New) The article of claim 42, wherein the body comprises a metal mesh disposed in a conventional polishing material.

47. (New) An article of manufacture for polishing a substrate, comprising:

a polishing article comprising a body having at least a partially conductive surface adapted to polish the substrate and a mounting surface, wherein the polishing article further comprises a plurality of perforations formed therein and a plurality of grooves disposed in the polishing surface.

48. (New) The article of claim 47, wherein at least a portion of the plurality of grooves intersect with at least a portion of a plurality of perforations disposed in the polishing surface.

49. (New) The article of claim 47, wherein the body comprises at least a conductive material having at least a portion of a conductive polymer, conductive filler materials, a

polymer composite with conductive materials, a conductive metal, a metal mesh, or combinations thereof.

50. (New) The article of claim 49, wherein the conductive filler materials comprise conductive fillers include carbon powder, carbon fibers, carbon nanotubes, carbon nanofoam, carbon aerogels, and combinations thereof.

51. (New) The article of claim 48, wherein the conductive filler materials comprise conductive fillers include carbon powder, carbon fibers, and combinations thereof.

52. (New) The article of claim 47, wherein the body comprises a metal mesh disposed in a conventional polishing material.

53. (New) An article of manufacture for polishing a substrate, comprising:
a polishing article comprising a body having at least a partially conductive surface adapted to polish the substrate and a mounting surface, wherein the polishing article further comprises a plurality of perforations formed therein; and

a polishing article support comprising a plurality of perforations disposed therein for flow of material therethrough, wherein the article of manufacture is disposed on the polishing article support.

54. (New) The article of claim 53, wherein a plurality of perforations in the polishing article are aligned with the plurality of perforations of the polishing article support.

55. (New) The article of claim 53, wherein the body comprises at least a conductive material having at least a portion of a conductive polymer, conductive filler materials, a polymer composite with conductive materials, a conductive metal, a metal mesh, or combinations thereof.

56. (New) The article of claim 55, wherein the conductive filler materials comprise conductive fillers include carbon powder, carbon fibers, carbon nanotubes, carbon nanofoam, carbon aerogels, and combinations thereof.

57. (New) The article of claim 55, wherein the conductive filler materials comprise conductive fillers include carbon powder, carbon fibers, and combinations thereof.

58. (New) The article of claim 53, wherein the body comprises a metal mesh disposed in a conventional polishing material.

59. (New) An apparatus for processing a substrate, comprising:

- a basin;

- a permeable disc disposed in the basin;

- a polishing article disposed on the permeable disc and at least a portion of the polishing article comprising an electrode, wherein the polishing article comprises a body having at least a partially conductive surface adapted to polish the substrate and a mounting surface, wherein the polishing article further comprises a plurality of perforations formed therein;

- a counter electrode disposed in the basin between the permeable disc and the bottom of the basin; and

- a polishing head adapted to retain the substrate during processing.

60. (New) The article of claim 59, wherein the body comprises at least a conductive material having at least a portion of a conductive polymer, conductive filler materials, a polymer composite with conductive materials, a conductive metal, a metal mesh, or combinations thereof.

61. (New) The article of claim 60, wherein the conductive filler materials comprise conductive fillers include carbon powder, carbon fibers, carbon nanotubes, carbon nanofoam, carbon aerogels, and combinations thereof.

62. (New) The article of claim 60, wherein the conductive filler materials comprise conductive fillers include carbon powder, carbon fibers, and combinations thereof.
63. (New) The article of claim 59, wherein the body comprises a metal mesh disposed in a conventional polishing material.
64. (New) A polishing article for polishing a substrate, comprising:
a body having a polishing surface adapted to polish the substrate; and
at least one conductive element embedded in the polishing surface, the conductive element having a contact surface that extends beyond a plane defined by the polishing surface; and
a biasing member disposed between the at least conductive element and the body, the biasing member adapted to urge the at least one conductive element towards the polishing surface.
65. (New) The polishing article of claim 64, wherein the body comprises a dielectric material selected from the group of polyurethane, polycarbonate, polyphenylene sulfide, felt fibers leached with urethane, filled polymers, foamed polymers, and combinations thereof.
66. (New) The polishing article of claim 64, wherein the body has a plurality of apertures formed therethrough.
67. (New) The polishing article of claim 64, wherein the biasing member comprises a spring, a foam polymer, plastic tubing, an elastomer, or combinations thereof.
68. (New) The polishing article of claim 64, wherein the biasing member is resilient and urges a compliant contact surface of the conductive element to electrically contact the substrate disposed on the polishing surface.

69. (New) The polishing article of claim 64, wherein the at least one conductive element is selected from at least one of the group of conductive tubing, a brush, a spring, a pin, a bar, a rod, a coil, a cylinder, a roller, a ball, or combinations thereof and combinations thereof.

70. (New) The polishing article of claim 69, wherein the at least one conductive element comprises carbon, a conductive metal, or combinations thereof.

71. (New) The polishing article of claim 64, wherein the biasing member is selected from the group of a spring, a foam polymer, plastic tubing, an elastomer, and combinations thereof, the at least one conductive element is selected from at least one of the group of conductive tubing, a brush, a spring, a pin, a bar, a rod, a coil, a cylinder, a roller, a ball, and combinations thereof, wherein the biasing member urges a compliant contact surface of the conductive element to electrically contact the substrate disposed on the polishing surface.

72. (New) The polishing article of claim 71, wherein the at least one conductive element comprises carbon, a conductive metal, or combinations thereof.

73. (New) The polishing article of claim 64, wherein the at least one conductive element comprises a plurality of graphite or gold balls seated on and electrically coupled through a graphite carrier.

74. (New) The polishing article of claim 64, wherein the at least one conductive element comprises one or more graphite rods each seated on a graphite carrier.

75. (New) The polishing article of claim 64, wherein the at least one conductive element comprises one or more carbon fibers.

76. (New) The polishing article of claim 64, wherein the at least one conductive element comprises a plurality of loop of graphite, gold, or conductive metal, coupled to a tie wire base embedded in the body.

77. (New) A polishing article for polishing a substrate, comprising:
a body having a polishing surface adapted to polish the substrate; and
a plurality of conductive compliant elements embedded in the polishing surface, the conductive compliant elements having a contact surface that extends beyond a plane defined by the polishing surface and is adapted to be urged by the substrate towards the polishing surface; and
a biasing member disposed between the conductive compliant elements and the body.

78. (New) The polishing article of claim 77, wherein the biasing member is selected from the group of a spring, a foam polymer, plastic tubing, an elastomer, and combinations thereof, the at least one conductive element is selected from at least one of the group of conductive tubing, a brush, a spring, a pin, a bar, a rod, a coil, a cylinder, a roller, a ball, and combinations thereof, wherein the at least one conductive element has a compliant contact surface to electrically contact the substrate disposed on the polishing surface.

79. (New) The polishing article of claim 78, wherein the at least one conductive element comprises carbon, a conductive metal, or combinations thereof.

80. (New) The polishing article of claim 77, wherein the at least one conductive element comprises one or more carbon fibers.

81. (New) The polishing article of claim 77, wherein the at least one conductive element comprises a plurality of loop of graphite, gold, or conductive metal, coupled to a tie wire base embedded in the body.

82. (New) A polishing article for polishing a substrate, comprising:
a body having a polishing surface adapted to polish the substrate; and
at least one conductive element embedded in the polishing surface, the conductive element having a contact surface that extends beyond a plane defined by the polishing surface, wherein the contact surface is rounded, cylindrical, spherical or comprised of fibers, loops, fingers, strands, or combinations thereof.
83. (New) The polishing article of claim 82, wherein the body comprises a dielectric material selected from the group of polyurethane, polycarbonate, polyphenylene sulfide, felt fibers leached with urethane, filled polymers, foamed polymers, and combinations thereof, and has a plurality of apertures formed therethrough.
84. (New) The polishing article of claim 82, wherein the at least one conductive element is selected from at least one of the group of conductive tubing, a brush, a spring, a pin, a bar, a rod, a coil, a cylinder, a roller, a ball, and combinations thereof.
85. (New) The polishing article of claim 84, wherein the at least one conductive element comprises carbon, a conductive metal, or combinations thereof.
86. (New) The polishing article of claim 82, wherein the at least one conductive element comprises a plurality of graphite or gold balls seated on and electrically coupled through a graphite carrier.
87. (New) The polishing article of claim 82, wherein the at least one conductive element comprises one or more graphite rods each seated on a graphite carrier.
88. (New) The polishing article of claim 82, wherein the at least one conductive element comprises one or more carbon fibers.

89. (New) The polishing article of claim 82, wherein the at least one conductive element comprises a plurality of loop of graphite, gold, or conductive metal, coupled to a tie wire base embedded in the body.
90. (New) A polishing article for polishing a substrate, comprising:
a body having a polishing surface adapted to polish the substrate; and
at least one conductive element embedded in the polishing surface, comprising:
a carrier disposed in a pocket formed in the body; and
a contact member disposed on the carrier, the contact member having a contact surface extending beyond a plane defined by the polishing surface.
91. (New) The polishing article of claim 90, wherein the carrier and contact member are conductive.
92. (New) The polishing article of claim 91, wherein at least one of the carrier and contact member is made of graphite, carbon, a conductive metal, or combinations thereof.
93. (New) The polishing article of claim 90, wherein the contact member comprises a plurality of conductive tubing, a brush, springs, pins, bars, rods, coils, cylinders, rollers, balls, or combinations thereof.
94. (New) The polishing article of claim 90, wherein the body comprises a dielectric material selected from the group of polyurethane, polycarbonate, polyphenylene sulfide, felt fibers leached with urethane, filled polymers, foamed polymers, and combinations thereof, and has a plurality of apertures formed therethrough.
95. (New) The polishing article of claim 90, wherein the at least one conductive element comprises a plurality of graphite or gold balls seated on and electrically coupled through a graphite carrier.